

Response to Final Office Action  
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**TELEPHONE CALL ON MONDAY SEPTEMBER 12, 2005**

The Applicants' representative, Jon Gibbons would like to thank Examiner Patel for the telephone discussion on Monday, September 12, 2005. Discussed was the interpretation of the claim limitation in independent claims 1, 7, and 13 of "each rotating sub-assembly of the two sealing stages is totally separable from one another" in view of Hosanna et al. (U.S. Patent No. 6,655,693). The Examiner pointed out that the rotating sub-assembly includes sleeve assembly 32, rotating seal ring 36, and collar 44. The Applicants' representative pointed out that the sleeve 32 is not separable. The Examiner stated that rotating seal ring 36 and collar 44 are and separable and may read as a rotating sub-assembly. The parties agreed that the independent claims of the present invention would have to be clarified to recite that the support sleeve is separable to distinguish over Hosanna.

The Examiner also pointed out U.S. Patent No. 3,588,124 (not cited) regarding two separable tandem seals. The Applicants address the differences of the present invention over this prior art in the section below.

**REJECTION UNDER 35 U.S.C. §102(B) BY HOSSANNA**

As noted above, the Examiner rejected claims 1, 3-7, 9-13 and 15-18 under 35 U.S.C. §102(b) as being anticipated by Hosanna et al. (U.S. 6,655,693). Referring to Hosanna, the rotating sleeve 32 attached to the rotating shaft 16 is common to the two symmetric stages. Careful examination of Figures 1 and 4 of Hosanna illustrate a single non-separable support sleeve assembly 32. The Applicants have amended independent claims 1, 7, and 13 to positively recite that "each rotating sub-assembly of the first sealing stage and the second sealing state including the support sleeve is totally separable from one another" and "each rotating sub-assembly includes a support

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sleeve mounted on the rotor, a rotating mating ring with a front face, and a locking sleeve slideably mounted on top of the support sleeve and a first end of the locking sleeve bearing against the front face of the mating ring thereby retaining the mating ring in the rotating sub-assembly." Support for this amendment is clearly illustrated in FIG. 2 by the two support sleeves 40' and at par. [0020] of the present invention as originally filed. No new matter has been added.

Hosanna is completely silent on teaching or suggesting two support sleeves 44' as recited in the independent claims 1, 7, and 13 of the present invention. Rather Hosanna teaches in col. 3, lines 7-18 describes a one single support sleeve 32. Accordingly, independent claims Independent claims 1, 7, and 13 of the present invention distinguish over Hosanna for at least this reason.

Further, Hosanna for clarity uses a prefix of "1" to denote components on the left-hand side sub-assembly that correspond to components on the right-hand side sub-assembly in Figures 1 and 4. For example, the following left-hand and right-hand component pairs 136 – 36, 144 – 44, 154 – 54, 156 – 56, 161 – 61, 162 – 62 are shown in Figures 1 and 4 of Hosanna. Clearly, Hosanna is teaching a one single unitary sleeve 32. There is no label 132 to denote a second sleeve. Hosanna's teaching of one single unitary sleeve 32 is not the same as "each rotating sub-assembly of the first sealing stage and the second sealing state including the support sleeve is totally separable from one another."

The Examiner cites 35 U.S.C. § 102(b) and a proper rejection requires that a single reference teach (i.e., identically describe) each and every element of the rejected

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claims as being anticipated by Hosanna.<sup>1</sup> The elements in independent claims 1, 7, and 13 of "each rotating sub-assembly of the two sealing stages is totally separable from one another" is not taught or disclosed by Hosanna. Accordingly, the present invention distinguishes over Hosanna for at least this reason.

Still, further, with this amendment to independent claims 1, 7, and 13, to recite "each rotating sub-assembly of the first sealing stage and the second sealing state including the support sleeve is totally separable from one another" further clarifies the mating element of the claims. Specifically, the Applicants respectfully submit that the Examiner's characterization of the collar 44 that lies above 32 of Hosanna with respect to the claim element in the present invention of:

"mating formations formed at adjacent axial ends of the rotating sub-assembly of the first sealing stage and the rotating sub-assembly of the second sealing stage to maintain the first sealing stage in axial alignment with the second sealing stage"

is now inoperable. Making the support sleeve 32 in Hosanna separable does not provide any structure or "mating formations" to axially align the first sealing stage and the second sealing stage. Accordingly, independent claims 1, 7, and 13 distinguish over Hosanna for this reason as well.

The Applicants respectfully submit that the Examiner's rejection under 35 U.S.C. § 102(b) has been overcome. For the foregoing reasons, independent claims 1, 7, and 13 distinguish over Hosanna. Claims 5-6, 11-12, and 17-18 depend from independent

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<sup>1</sup> See MPEP §2131 (Emphasis Added) "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim."

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claims 1, 7, and 13 respectively. Since dependent claims contain all the limitations of the independent claims, claims 5-6, 11-12, and 17-18 distinguish over Hosanna, and the Examiner's rejection should be withdrawn.

The Applicants point out the following differences with regard to Guinard (U.S. 3,588,124) that the Examiner pointed out in the telephone call with the Applicants' representative of teaching tandem seals. As an initial matter, to those of average skill in the compressor gas sealing art would recognize that rotating seal 16 and stationary seal 18 being identical sizes as illustrated in Guinard would not work in a gas compressor. Guinard is illustrating a liquid compressor. Gas compressors for the aerodynamic effect to work properly must have a rotating and stationary seal of different size like those shown in Hosanna and the present invention. Further, the rotating seal 16 in Guinard is rigidly fixed. There is not a bias provided by a spring as found in a gas compressor. Accordingly, the Applicants respectfully submit that any potential combination of Hosanna with Guinard is inoperable for at least this reason.

Further, even if we were to construe the teachings of Guinard applicable to a gas compressor, each stage of the tandem sealing stages as taught by Guinard must be operated together to properly function as a seal. The apparatus of Guinard does not permit "each of the first sealing stage and the second sealing stage is capable of functioning as a seal when separated from the other stage." Accordingly, the Applicants respectfully submit that any potential combination of Hosanna with Guinard is inoperable for at least this reason as well.

Still further, Guinard is completely silent on:

"mating formations formed at adjacent axial ends of the rotating sub-assembly of the first sealing stage and the rotating sub-assembly of the second

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sealing stage to maintain the first sealing stage in axial alignment with the second sealing stage.”

The intention in Guinard is to operate the stages together and not to operate the stages independently. Therefore, there is no reason for Guinard to discuss axial alignment of each tandem stage with respect to the other.

Moreover, the Federal Circuit has consistently held that when a §103 rejection is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference, such a proposed modification is not proper and the prima facie case of obviousness can not be properly made. See *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Here the intent, purpose and function of Guinard is operating each of the two tandem seals together. Not only does the present invention eliminate the requirement to operate the two tandem seals together “each of the first sealing stage and the second sealing stage is capable of functioning as a seal when separated from the other stage” as required by Guinard, but the present invention makes use of the many advantages of balancing and maintaining each of the seal assemblies separately. Any potential combination of Guinard with other references, as suggested by the Examiner, destroys the intent and purpose of Guinard use of each sub-assembly together. Accordingly, the present invention is distinguishable over Guinard for this reason as well.

### **CONCLUSION**

In this Response, Applicants have amended certain claims. In light of the Office Action, Applicants believe these amendments serve a useful clarification purpose, and are desirable for clarification purposes, independent of patentability. Accordingly, Applicants respectfully submit that the claim amendments do not limit the range of any permissible equivalents.

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Applicants acknowledge the continuing duty of candor and good faith in the disclosure of information known to be material to the examination of this application. In accordance with 37 CFR §1.56, all such information is dutifully made of record. The foreseeable equivalents of any territory surrendered by amendment is limited to the territory taught by the information of record. No other territory afforded by the doctrine of equivalents is knowingly surrendered and everything else is unforeseeable at the time of this amendment by the Applicants and their attorneys.

Applicants respectfully submit that all of the grounds for rejection stated in the Examiner's Office Action have been overcome, and that all claims in the application are allowable. No new matter has been added. It is believed that the application is now in condition for allowance, which allowance is respectfully requested.

**PLEASE CALL** the undersigned attorney at (561) 989-9811 should the Examiner believe a telephone interview would help advance prosecution of the application.

Respectfully submitted,

Date: September 12, 2005

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